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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/705,899

11/13/2003

Joun Ho Lee

8733.275.20-US

6109

30827 7590 11/17/2008  
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EXAMINER

NGUYEN, HOAN C

ART UNIT

PAPER NUMBER

2871

MAIL DATE

DELIVERY MODE

11/17/2008

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/705,899	<b>Applicant(s)</b> LEE ET AL.	
	<b>Examiner</b> HOAN C. NGUYEN	<b>Art Unit</b> 2871	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 22 July 2008.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1 and 25-32 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1 and 25-32 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### *Response to Amendment*

Applicant's arguments with respect to claims 1, 7, 13 and 19-20 based on the Response filed on 12/13/2005 have been considered but are moot in view of the new ground(s) of rejection. Therefore, this is Final action.

Applicants submitted a certified English translation of Applicants' foreign priority document filed on July 31, 1999 in the last response filed on February 26, 2008 and file another copy herewith to overcome Takatori et al. (US 6504592). Examiner will change to another reference: Suzuki et al. (US6256082B1).

Applicants admitted that Kim et al. (US 6356335) and the instant application were commonly assigned or subject to an obligation of assignment to LG. Philips LCD Co., Ltd. Applicants admitted that Kim et al. (US 6335776) and the instant application were commonly assigned or subjected to an obligation of assignment to LG. Philips LCD Co., Ltd. However, applicants fail to state that Kim et al. (US 6356335) or Kim et al. (US 6335776) and the instant application were commonly assigned or subject to an obligation of assignment to LG. Philips LCD Co. at the time of this invention.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

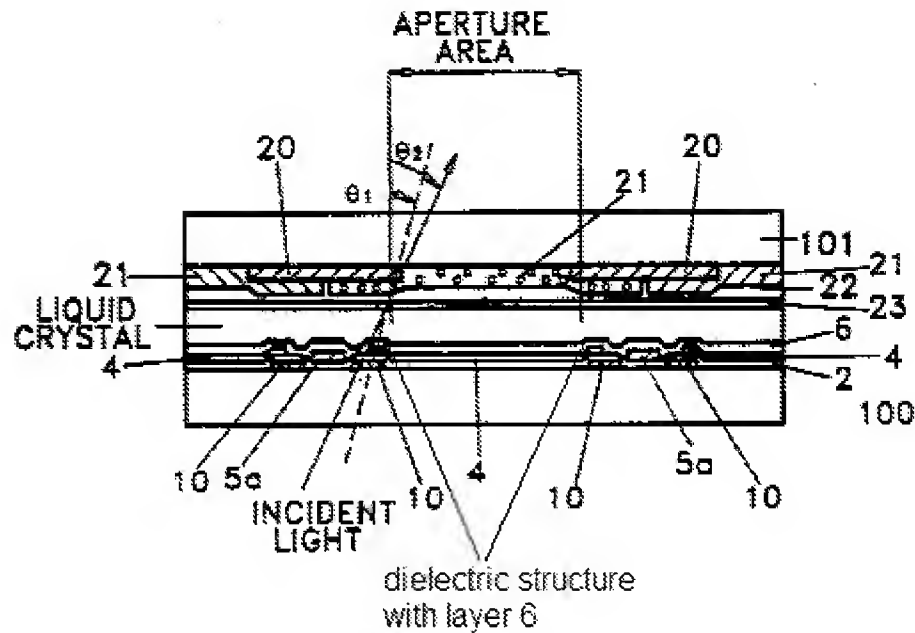
(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

1. Claims 1 and 32 are rejected under 35 U.S.C. 103(a) as being unpatentable over by Kim et al. (US5767926A) and Suzuki et al. (US6256082B1).

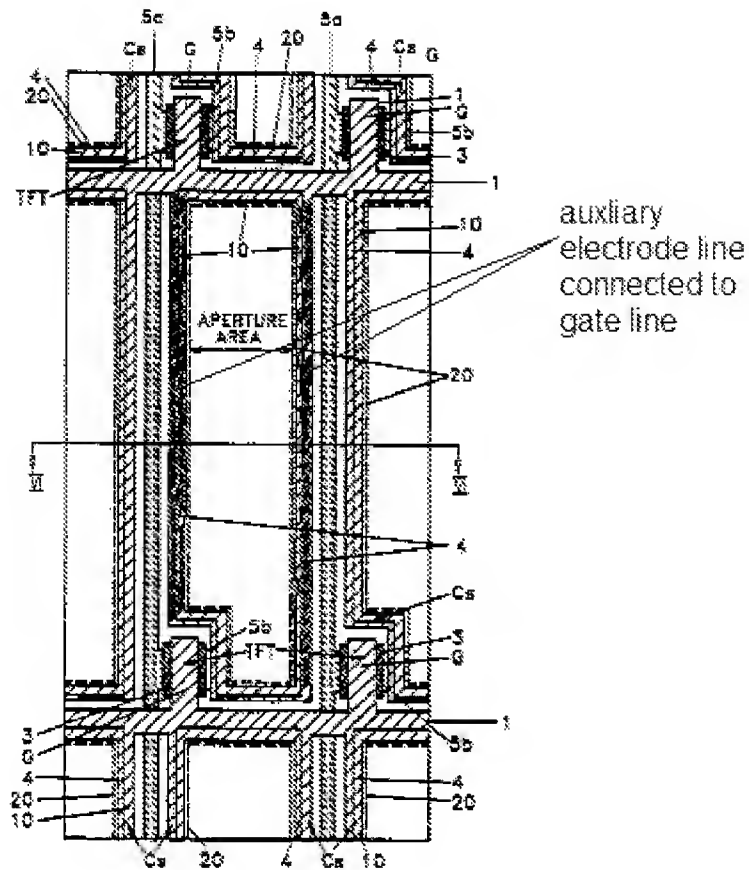
In regard to claim 1, Kim et al. disclose (Figs. 3G-J) a multi-domain liquid crystal display device comprising:

- first and second substrates ;
- a liquid crystal layer between the first and second substrates;
- a plurality of data lines 5a for applying a data signal on the first substrate;
- a plurality of gate lines 1 for applying a gate signal, the gate lines crossing the data lines to define a plurality of pixel regions, wherein each pixel region has a multi-domain structure which includes a dielectric structure (layer 6 made of

silicon nitride);



- a thin film transistor near each crossing of the gate lines and the data lines;
- a common electrode 17 on the second substrate;
- a pixel electrode 13 connected to a drain electrode of the thin film transistor in each pixel region; and
- an auxiliary electrode line 15 electrically connected to at least one of the common lines in each pixel region, the auxiliary electrode line and the multi-domain structure distorting an electric field applied between the common electrode and the pixel electrode to thereby form at least two domains in each pixel region during an operation of the multi-domain liquid crystal display,



wherein

- the auxiliary electrode line is formed between the pixel electrode and the data line at an outside of the pixel electrode in the pixel region and the auxiliary electrode is not overlapped with the data line.

Claim 32:

- the auxiliary electrode line is formed in the same layer as the gate lines.

Kim et al. fail to disclose the common electrode including an opening area.

Suzuki et al. teach the common electrode including an opening area.

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to further modify a multi-domain liquid crystal display device as Kim et al. disclosed with the common electrode including an opening area for generating an oblique field based on difference in size between the upper and the lower electrodes, by which liquid crystal molecules are tilted in a divided manner (col. 10 lines 18-20) as Suzuki et al. taught.

2. Claim 25 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kim et al. (US5767926A) and Suzuki et al. (US6256082B1) as applied to claims 1 and 32 in view of Takeda et al. (US 6724452 B1).

Kim et al. fail to disclose a dielectric structure 53 on the second substrate.

Takeda et al. teach a multi-domain liquid crystal display device with a dielectric structure (dielectric protrusion) on the second substrate as domains regulating means for providing the ion adsorption capacity to the dielectric structure.

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to further modify a multi-domain liquid crystal display device as **Kim et al.** disclosed with a dielectric structure (dielectric protrusion) on the second substrate as domains regulating means for providing the ion adsorption capacity to the dielectric structure as taught by Takada et al. (col. 73 lines 10-17).

1. Claims 26-27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kim et al. (US5767926A) and Suzuki et al. (US6256082B1) as applied to claims 1 and 32 in view of Yamamoto et al. (US5657100A).

Kim et al. fail to disclose the liquid crystal layer having a negative or positive dielectric anisotropy.

Yamamoto et al. teach a liquid crystal display device wherein the liquid crystal layer has a positive dielectric anisotropy for obtaining high contrast ratio (col. 5 lines 22-31) or the liquid crystal layer has negative dielectric anisotropy for obtaining low contrast ratio (col. 7 lines 14-21).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to further modify a multi-domain liquid crystal display device as **Kim et al.** disclosed with the liquid crystal layer has a positive dielectric anisotropy for obtaining high contrast ratio as taught by Yamamoto (col. 5 lines 22-31) or the liquid crystal layer has negative dielectric anisotropy for obtaining low contrast ratio as taught by Yamamoto (col. 7 lines 14-21).

2. Claim 28 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kim et al. (US5767926A) and Suzuki et al. (US6256082B1) as applied to claims 1 and 32 in view of Shimada (US5710609A).

Kim et al. fail to disclose the liquid crystal layer includes a chiral dopant.

Shimada teaches the liquid crystal layer including a chiral dopant.



Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to further modify a multi-domain liquid crystal display device as Kim et al. disclosed with the liquid crystal layer including a chiral dopant for adjusting the twist pitch (col. 4 lines 54-55) as Shimada taught.

3. Claims 29-31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kim et al. (US5767926A) and Suzuki et al. (US6256082B1) as applied to claims 1 and 32 in view of VanderPloeg et al. (US5859681A).

Kim et al. fail to disclose a multi-domain liquid crystal display device with a phase-differential film on at least one of the first and second substrates, wherein the phase-differential film includes a negative uniaxial film (claim 30) or the phase-differential film includes a negative biaxial film (claim 31).

VanderPloeg et al. teach a liquid crystal display device with a phase-differential film on at least one of the first and second substrates, wherein the phase-differential film includes a negative uniaxial film (claim 30) or the phase-differential film includes a negative biaxial film (claim 31) for providing improved contrast (col. 1 lines 20-21).

### ***Conclusion***

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

Art Unit: 2871

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to HOAN C. NGUYEN whose telephone number is (571)272-2296. The examiner can normally be reached on MONDAY-THURSDAY:8:00AM-4:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Nelms can be reached on (571) 272-1787. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2871

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

HOAN C. NGUYEN  
Examiner  
Art Unit 2871

Chn

/Andrew Schechter/  
Primary Examiner, Art Unit 2871